



Circular Economy Webinar

Session 8 Summary: Omni Processor Project: Revolutionizing Municipal Solid Waste and Liquid Sludge Management in Bangladesh

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The Omni Processor is part of the Integrated Waste Treatment Plant in Bangladesh, a community-scale unit that processes fecal sludge and solid waste. It generates multiple outputs, including distilled water, electricity, and biochar. These outputs can be utilized in various development interventions, such as using biochar for agricultural production.

Key Takeaways

- 1. The Emergency Assistance Project is a multi-sectoral initiative that focuses on improving water supply and sanitation, disaster risk management, sustainable energy supply, and road infrastructure in Cox's Bazaar District.** It involves various government departments and in coordination with UN agencies, the World Bank, and other humanitarian donors.
- 2. One of the key issues identified during the project implementation was waste management.** Existing waste treatment plants were found to have limitations in terms of space requirements, treatment capacity, and compliance with environmental standards.
- 3. To address these challenges, an Integrated Waste Treatment Plant, including a fecal sludge and segregated solid waste processing unit, was established as a pilot intervention.** This integrated facility in Camp 4 extension occupies only 1,000 square meters of land and can serve a minimum population of 100,000 within the camps.
- 4. The Omni Processor generates enough energy to run all the plants without requiring external power sources.** It also operates without the need for water or manual labor. It treats sludge according to EPA guidelines and achieves a sludge reduction volume of 97%. The process

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generates byproducts such as energy, distilled water, and industrial-grade water.

5. **The Omni Processor system has three main outputs: industrial-grade water, distilled water, and power.** The biosolids obtained from the dryer are used in the boiler to generate high-pressure steam, which runs a turbine to generate power. The exhaust steam from the turbine goes back to the dryer, providing heat for the boiling process. It operates as a closed circuit, with the entire process being automatic once the sludge enters the system.
6. **One of the benefits of the Omni Processor is space efficiency.** It requires only 85% less space in comparison to biological processes, the treatment of sludge follows EPA guidelines, and it generates multiple outputs without the need for manual labor.
7. **The Integrated Waste Management System has now been introduced in Bangladesh with the support of ADB and the DPHE.**
8. **The project aims to minimize land footprint by treating multiple waste streams and reducing methane emissions from landfill disposal.** The Government of Bangladesh, in its 8th Five-Year Plan, emphasizes the use of waste management technologies with low land and carbon footprints. The Omni processor aligns with these criteria.
9. **An analysis of the project's climate change impact and emission reduction has been conducted,** comparing the project scenario to a no-project scenario, and the results indicate emission reductions achieved through the Omni processor implementation.

[Watch the Recording here.](#)